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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,604	12/07/2001	Pablo D. Garcia	002441.00008	6543

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EXAMINER	
WINKLER, ULRIKE	
ART UNIT	**PAPER NUMBER**
1648	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/016,604	GARCIA ET AL.	
	Examiner	Art Unit	
	Ulrike Winkler	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) *16-38* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☒ Claim(s) *8, 9, 10, 12-15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/17/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election of Group I (claims 1-15) with further election of N1-N5 pertaining to SEQ ID NO:155 and 5 in the response filed December 22, 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). In order to facilitate the prosecution of this application, Applicant is requested to cancel all non-elected embodiments from the claims.

Sequence listing

Applicant's CRF and paper sequence listing have been entered.

Information Disclosure Statement

An initialed and dated copy of Applicant's IDS form 1449, submitted September 17, 2003, is attached to the instant Office Action.

Claim Objections

Claims 8, 9, 10, 12, 13, 14 and 15 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n) especially reference to two sets of claims to different features. Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 8-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are rendered indefinite in that they only describe the composition by an arbitrary name HML-2. While the name itself may have some notion of activity of the polynucleotide, there is nothing in the claims which distinctly describes the polynucleotide and variants thereof. For example, others in the field may isolate the same polynucleotide and give it an entirely different name. Applicant should particularly point out and distinctly claim the "nucleic acid molecule and variant thereof" by claiming characteristics associated with the nucleic acid (e.g. sequence). Claiming a biochemical molecule by a particular name given to the nucleic acid by the various workers in the field fails to distinctly claim what that protein is and what the composition is made of.

Applicant is reminded that any amendment must point to a basis in the specification so as not to add new matter. See MPEP 714.02 and 2163.06.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are drawn to method of diagnosing prostate cancer by detecting the presence of HML-2 or by detecting SEQ ID NO: 155 and 5 or by detecting sequences having at least 50% to 80% sequence identity to the polynucleotide of SEQ ID NO: 155 and 5. The claims do not require that the polynucleotide possesses any particular distinguishing feature or conserved structure. Therefore, the claims are drawn to a genus of polynucleotides that are defined only by sequence identity.

To provide adequate written description and evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The art indicates that HML-2 comprises a group of retroelements (Zsiros et al. Journal of General Virology, 1998, listed on IDS; see figures) having diverse structures at the nucleic acid level. A definition by function alone "does not suffice, to sufficiently describe a coding sequence "because it is only an indication of what the gene does, rather than what it is." *Eli Lily*, 119 F.3 at 1568, 43 USPQ2d at 1406. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, the only factor present in the claim is a partial structure in the form of a recitation of percent identity. There is not even identification of any particular portion of the structure that must be conserved. Accordingly, in the absence of sufficient recitation of distinguishing identifying characteristics, the specification does not provide adequate written description of the claimed genus.

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states "applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the 'written description' inquiry, *whatever is now claimed.*" (See page 1117.) The specification does not "clearly allow persons of ordinary skill in the art to recognize that [he or she] invented what is claimed." (See *Vas-Cath* at page 1116). As discussed above, the skilled artisan cannot envision the detailed chemi chemical structure of the encompassed genus of polypeptides, and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method of isolating it. The compound itself is required. See *Fiers v. Revel*, 25 USPQ2d 1601 at 1606 (CAFC 1993) and *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Therefore, only isolated polynucleotide sequences that have actually been correlated with prostate cancer meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

Claims 1-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are drawn to method of diagnosing prostate cancer by detecting the presence of HML-2 or by detecting SEQ ID NO: 155 and 5 or by detecting sequences having at least 50% to 80% sequence identity to the polynucleotide of SEQ ID NO: 155 and 5. The claims do not require that the polynucleotide possesses any particular distinguishing feature or conserved structure. Therefore, the claims are drawn to a genus of polynucleotides that are defined only by sequence identity.

To comply with the enablement requirement of 35 U.S.C. § 112, first paragraph, the specification must enable one skilled in the art to make and use the claimed invention without undue experimentation. The claims are evaluated for enablement based on the Wands analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731,8 USPQ2d 1400 (Fed.Circ.1988) as follows: (1) the nature of the invention, (2) the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims. Such an analysis does not need to specifically enumerate (points 1-8) but only needs to have a select few of the factors present discussed in a rejection.

The specification shows a correlation of specific sequences in the tumor tissue of 13 patients having prostate cancer (see specification table 6)

The scope of the claims is not commensurate with the enablement provided by the disclosure with regard to the myriad of nucleic acids and oligonucleotides. The specification does not provide sufficient guidance and direction as to the nature and identification of these nucleic acids and oligonucleotides, including those that are 50-80% sequence identical to the particular claimed SEQ ID NO: 155 and 5 sequences. Minor structural differences among structurally related compounds and compositions could result in substantially different biological properties and activities. The art indicates that HML-2 comprises a group of retroelements (Zsiros et al. Journal of General Virology, 1998, listed on IDS; see figures) having diverse structures at the nucleic acid level. Applicants have not provided sufficient teaching to show that all HML-2 variants are predictably associated with prostate cancer. Furthermore, applicants have not provided sufficient showing that an increase in the HML-2 level in the blood correlates with only prostate cancer. HML-2 can be found in other tissues (Medstrand et al. Journal of Virology, 1993, listed on IDS) such as placenta and kidney, therefore, and increase in the level of HML-2 in the blood will not be indicative of prostate cancer as the increase could be due to pathologies found in the kidney or placenta. The claims not only encompass a method using nucleic acids set forth in the SEQ ID NO: SEQ ID NO: 155 and 5 but also encompass nucleic acids encoding innumerable variants and derivatives (having 50-80% sequence identical). Reasonable correlation must exist between the scope of the claims and the scope of the enablement set forth. One of skill in the art would neither expect nor predict the appropriate function, of being correlated with prostate cancer, of the nucleic acids as broadly as claimed. It would be undue experimentation to produce all such possible DNA molecules without more explicit guidance from the disclosure.

Applicant is reminded that any amendment must point to a basis in the specification so as not to add new matter. See MPEP 714.02 and 2163.06.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-3 and 11 are rejected under 35 U.S.C. 102(a) as being anticipated by Wang-Johanning et al. [American Association for Cancer Research Annual Meeting (March 1999) Vol. 40, page 424, Abstract # 2801].

The instant invention is drawn to a method of detecting the expression of an endogenous retrovirus (HML-2) in a patient sample, wherein the expression product is a RNA which is detected using RT-PCR. Because the HML-2 designation has been determined to be indefinite above the limitation has not been given weight for the purposes of the instant rejection.

Wang-Johanning et al. disclose the detection of human endogenous retrovirus envelope which is expressed at high levels in prostate cancer tissue. The reference observes the high expression of a retroviral envelope product when compared to normal prostate tissue. Therefore, the instant invention is anticipated by Wang-Johanning et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang-Johanning et al. [American Association for Cancer Research Annual Meeting (March 1999) Vol. 40, page 424, Abstract # 2801] and Barbulescu et al. [Current Biology (August 1999)]

The instant invention is drawn to a method of detecting the expression of an endogenous retrovirus (HML-2) in a patient sample, wherein the expression product is a RNA which is detected using RT-PCR. Because the HML-2 designation has been determined to be indefinite above the limitation has not been given weight for the purposes of the instant rejection.

Wang-Johanning et al. disclose the detection of human endogenous retrovirus envelope, which is expressed at high levels in prostate cancer tissue. The reference observes the high

expression of a retroviral envelope product when compared to normal prostate tissue. The reference does not disclose the sequence set out in SEQ ID NO 5 and 155.

Barbulescu et al. disclose a full length endogenous retrovirus HERV-k108 sequence which comprises SEQ ID NO 5 and SEQ ID NO.155.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the detection method disclosed by Wang-Johanning et al. which is directed to HERV sequences and apply the sequence set out in Barbulescu et al. One having ordinary skill in the art would have had a high expectation of success in utilizing the HERV sequence for detecting the prostate cancer tissues as the retrovirus is highly expressed on these tissues. Therefore, the instant invention is obvious over Wang-Johanning et al. and Barbulescu et al.

Conclusion

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ulrike Winkler, Ph.D. whose telephone number is 703-308-8294, please note after February 2004 the telephone number will change to 571-272-0912. The examiner can normally be reached M-F, 8:30 am - 5 pm. The examiner can also be reached via email [ulrike.winkler@uspto.gov].

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached at 703-308-4027.

The official fax phone number for the organization where this application or proceeding is assigned is 703-872-9306; for informal communications please use 703-746-3162, please note after February 2004 the fax phone number will change to 571-273-0912.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

ULRIKE WINKLER, PHD.
PATENT EXAMINER
3/8/04